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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/606,636	Applicant(s) ROTHMAN ET AL.	
	Examiner Grant Ford	Art Unit 2141	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,5-15 and 27-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,5-15,27-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 10/24/2007 have been fully considered but they are not persuasive. Applicant argued in substance that –

(A) The cited prior art fails to teach *“the method being facilitated by firmware running on the plurality of computing resources”*.

(B) One of ordinary skill in the art could not have combined the prior art of Abbondanzio with the prior art of Chilton to result in the claimed invention.

2. As to point (A), In response to applicant's arguments, the recitation *“the method being facilitated by firmware running on the plurality of computing resources”* has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

3. As to point (B), Applicant argues that the Examiner relies upon the "combining prior art elements" rationale to reject claims 1,3-4, and 10-15. The Examiner notes that Applicant's arguments are based upon a single example of a non-exhaustive list of

rationales which may be used to support a conclusion of obviousness as outlined at MPEP 2143. The Examiner can find no explicit statement of record of the Office taking any implicit or explicit position that the combination of Abbondanzio with Chilton utilizes the exemplary rationale of "(A) Combining prior art elements according to known methods to yield predictable results" (hereinafter referred to as "exemplary rationale A"). The response to point (C) at pages 3-4 of the Final rejection dated 7/25/2007 states "*the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art ...*" At the least, this citation directly mirrors the language of exemplary rationale G of MPEP 2143 which states: "(G) *Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention.*" As such, Applicant's arguments against of the combination of Abbondanzio with the prior art of Chilton are based upon analysis of a different rationale than that which was relied upon by the Examiner (while not limited solely to "exemplary rationale G"). Additionally, the Examiner notes from MPEP 2143: "*Note that the list of rationales provided is not intended to be an all-inclusive list. Other rationales to support a conclusion of obviousness may be relied upon by Office personnel.*" Applicant's arguments appear to attempt to limit the Office's conclusion of obviousness to exemplary rationale A, contrary to the conclusion of obviousness found in the Final rejection dated 7/25/2007. For at least this reason, Applicant's arguments are not persuasive.

4. Applicant's arguments with respect to claims 27-30 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1,3-4, and 10-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chilton (US 2002/0124134) in view of Abbondanzio et al. (6,968,414) hereinafter referred to as Abbondanzio.

- a. As per claim 1, Chilton discloses method for sharing resources across a plurality of computing platforms, comprising:

receiving a resource access request to access a shared resource at a first computing platform (Para. 0036);

determining a second computing platform via which the shared resource may be accessed (Para. 0036);

sending the resource access request to the second computing platform (Para. 0036);

accessing the shared resource via the second computing platform (Para. 0036). However, Chilton fails to explicitly teach the use of blade servers.

Abbondanzio teaches the use of blade servers in a blade server environment (Col 2 lines 3-26). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the use of blade servers in distributed computing systems. One of ordinary skill in the art would have been motivated to do so for the purpose of permitting hot-swappable expansion of a server system (Col 1 lines 33-50).

b. As per claim 3, Chilton and Abbondanzio teach the invention substantially as claimed above. Additionally, Chilton discloses wherein the method is performed in a manner that is transparent to operation systems running on the plurality of computing platforms (Para. 0038).

c. As per claim 10, Chilton and Abbondanzio teach the invention substantially as claimed above. Additionally, Chilton discloses maintaining global resource mapping data identifying which resources are accessible via which computing platforms (Para. 0035-0036); and

employing the global resource mapping data to determine which computing platform to use to access the shared resource (Para. 0035-0036, 0046).

d. As per claim 11, Chilton and Abbondanzio teach the invention substantially as claimed above. Additionally, Chilton discloses wherein a local copy of the global resource mapping data is maintained on each of the plurality of computing platforms (Para. 0035-0036, 0046).

e. As per claim 12, Chilton and Abbondanzio teach the invention substantially as claimed above. Additionally, Chilton discloses wherein the global resource mapping data is maintained by a central global resource manager (Para. 0032).

f. As per claim 13, Chilton discloses a method comprising:

- configuring the plurality of storage devices as a virtual storage volume (Para. 0034-0036);
- maintaining a global resource map that maps I/O blocks defined for the virtual storage volume to corresponding storage devices that actually host the I/O blocks (Para. 0034-0036);
- receiving a data access request identifying an I/O block from which data are to be accessed via the virtual storage volume (Para. 0036);
- identifying a computing platform via which a target storage device that actually hosts the I/O block may be accessed through the use of the global resource map (Para. 0035-0036);
- routing the data access request to the computing platform that is identified (Para. 0036); and
- accessing the I/O block on the target storage device via the computing platform that is identified (Para. 0036). However, Chilton fails to explicitly teach the use of blade servers.

Abbondanzio teaches the use of blade servers in a blade server environment (Col 2 lines 3-26). It would have been obvious to one having ordinary skill

in the art at the time the invention was made to incorporate the use of blade servers in distributed computing systems. One of ordinary skill in the art would have been motivated to do so for the purpose of permitting hot-swappable expansion of a server system (Col 1 lines 33-50).

g. As per claim 14, Chilton and Abbondanzio teach the invention substantially as claimed above. Additionally, Chilton discloses configuring the plurality of storage devices as at least one RAID virtual storage volume (Para. 0041);

maintaining RAID configuration mapping information that maps I/O blocks defined for said at least one RAID virtual storage volume to corresponding storage devices that actually host the I/O blocks (Para. 0041); and

employing the RAID configuration mapping information to access appropriate storage devices in response to read and write access requests (Para. 0041).

h. As per claim 15, Chilton and Abbondanzio teach the invention substantially as claimed above. Additionally, Chilton discloses wherein the RAID virtual storage volume is configured in accordance with the RAID-1 standard (Para. 0041). The Examiner notes that Chilton functions to operate in accordance with the RAID standard. As RAID-1 is merely a design choice within the RAID standard, Chilton functions to operate in accordance with RAID-1.

7. Claims 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chilton and Abbondanzio further in view of Hemphill et al. (5,696,895), hereinafter referred to as Hemphill.

a. As per claim 5, Chilton and Abbondanzio teach the invention substantially as claimed above. However, Chilton fails to explicitly teach wherein the resource access request is sent via an OOB communication channel.

Hemphill teaches wherein the resource access request is sent to the second computing platform via an out-of-band (OOB) communication channel (Figure 1 element 150). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the use of an OOB communication channel with distributed server systems. One of ordinary skill in the art would have been motivated to do so for the purpose of providing monitoring and failed server recovery capabilities (Col 3 lines 31-48).

b. As per claim 6, Chilton, Abbondanzio, and Hemphill teach the invention substantially as claimed above. However, Chilton fails to explicitly teach wherein the resource access request is sent via an OOB communication channel.

Hemphill teaches wherein the OOB communication channel comprises one of a system management bus, an Ethernet-based network, or a serial communication link (Figure 1 element 150). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the use of a serial OOB communication channel with distributed server systems. One of ordinary

skill in the art would have been motivated to do so for the purpose of providing monitoring and failed server recovery capabilities (Col 3 lines 31-48).

c. As per claim 7, Chilton, Abbondanzio, and Hemphill teach the invention substantially as claimed above. Additionally, Chilton discloses wherein the target resource comprises a storage device (Abstract, Para. 0022).

d. As per claim 8, Chilton, Abbondanzio, and Hemphill teach the invention substantially as claimed above. Additionally, Chilton discloses wherein the resource access request comprises a storage device write request (Para. 0010, 0026, 0036) and sending data corresponding to the storage device write request (Para. 0026, 0036). However, Chilton fails to explicitly teach wherein the resource access request is sent via an OOB communication channel.

Hemphill teaches wherein the resource access request is sent to the second computing platform via an out-of-band (OOB) communication channel (Figure 1 element 150). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the use of an OOB communication channel with distributed server systems. One of ordinary skill in the art would have been motivated to do so for the purpose of providing monitoring and failed server recovery capabilities (Col 3 lines 31-48).

e. As per claim 9, Chilton, Abbondanzio, and Hemphill teach the invention substantially as claimed above. Additionally, Chilton discloses wherein the resource access request comprises a storage device read request (Para. 0010, 0026, 0036) and the method further comprises:

retrieving data corresponding to the read request from the shared resource (Para. 0036); and

sending the data that are retrieved back to the first computing platform (Para. 0036). However, Chilton fails to explicitly teach wherein the resource access request is sent via an OOB communication channel.

Hemphill teaches wherein the resource access request is sent to the second computing platform via an out-of-band (OOB) communication channel (Figure 1 element 150). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the use of an OOB communication channel with distributed server systems. One of ordinary skill in the art would have been motivated to do so for the purpose of providing monitoring and failed server recovery capabilities (Col 3 lines 31-48).

8. Claims 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chilton, Abbondanzio, and Hemphill in view of Cohn et al. (US 2003/0191908), hereinafter referred to as Cohn.

a. As per claim 27, Chilton discloses receiving a resource access request from an operating system running on a requesting server to access a shared resource hosted by at least one of the plurality of servers (Para. 0036);

determining a target resource host from among the plurality of servers that host a target resource that may service the resource access request (Para. 0036);

sending the resource access request to the target resource host (Para. 0036); and

accessing the target resource via the target resource host to service the resource access request (Para. 0036). However, Chilton fails to explicitly teach the use of an OOB channel or the use of blade servers.

Abbondanzio teaches a chassis including a plurality of slots in which respective server blades may be inserted including an interface plane having a plurality of for mating with connectors on inserted server blades providing communication paths between the plurality of connectors (Figure 3, Col 2 lines 3-26); and a plurality of server blades including a processor and corresponding memory to perform operations (Figure 3, Col 1 lines 33-50). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the use of blade servers in distributed computing systems. One of ordinary skill in the art would have been motivated to do so for the purpose of permitting hot-swappable expansion of a server system (Col 1 lines 33-50).

Hemphill teaches the use of an out-of-band (OOB) communication channel (Figure 1 element 150). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the use of an OOB communication channel with distributed server systems. One of ordinary skill in the art would have been motivated to do so for the purpose of providing monitoring and failed server recovery capabilities (Col 3 lines 31-48).

Cohn teaches wherein server blades utilize a processor an associated firmware executable thereon to perform operations (Abstract, Para. 0040). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the use of a firmware associated with a processor in a server blade for performing operations. One of ordinary skill in the art would have done so for the purpose of providing a read only memory (ROM) which includes a BIOS for controlling operations of a server blade such as communications requesting access to storage (Para. 0040).

b. As per claim 28, Chilton, Abbondanzio, Hemphill, and Cohn teach the invention substantially as claimed above. Additionally, Chilton discloses wherein the operations are performed in a manner that is transparent to operating systems which are run on the plurality of server blades (Para. 0038).

c. As per claim 29, Chilton, Abbondanzio, Hemphill, and Cohn teach the invention substantially as claimed above. However, Chilton fails to explicitly disclose the use of an OOB communication channel. Hemphill teaches the use of an out-of-band (OOB) communication channel (Figure 1 element 150). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the use of an OOB communication channel with distributed server systems. One of ordinary skill in the art would have been motivated to do so for the purpose of providing monitoring and failed server recovery capabilities (Col 3 lines 31-48).

d. As per claim 30, Chilton, Abbondanzio, Hemphill, and Cohn teach the invention substantially as claimed above. Additionally, Chilton discloses a hidden

execution mode (Para. 0036), as operations between ICDA units occur on a separate network from which requests are received. However, Chilton fails to explicitly disclose the use of an OOB communication channel.

Hemphill teaches the use of an out-of-band (OOB) communication channel (Figure 1 element 150). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the use of an OOB communication channel with distributed server systems. One of ordinary skill in the art would have been motivated to do so for the purpose of providing monitoring and failed server recovery capabilities (Col 3 lines 31-48).

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Grant Ford whose telephone number is (571)272-8630. The examiner can normally be reached on 8-5:30 Mon-Thurs alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached on (571)272-3880. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Application/Control Number:
10/606,636
Art Unit: 2141

Page 14

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gmf



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